

CLAIMS:

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I claim:

1 1. A thermoplastic molding process comprising the
2 steps of:

3 selecting a thermoplastic extrusion die for the
4 extrusion of a thermoplastic slab, said extrusion die
5 having adjustable die gate members for varying the
6 thickness of the extruded material in different parts
7 of the extruded slab;

8 adjusting the thermoplastic extrusion die for
9 varying the thickness of the extruded material passing
10 therethrough in different parts of the extruded slab;

11 heating a thermoplastic material to a fluid;

12 extruding a slab of said fluid thermoplastic
13 material through said selected and adjusted
14 thermoplastic extrusion die;

15 trimming said extruded thermoplastic slab having
16 a variable thickness to a predetermined size;

17 placing said trimmed slab of heated thermoplastic
18 material into a thermoforming mold; and

19 molding a predetermined thermoformed part in said
20 mold, whereby a molded part is formed with a variable
21 thickness from a slab of material heated during
22 extrusion of the material.

1 2. A thermoplastic molding process in accordance
2 with claim 1 including the step of moving said
3 thermoforming mold having a molded part therein while
4 said mold is cooling.

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1 3. A thermoplastic molding process in accordance
2 with claim 2 including the step of moving a second
3 thermoforming mold in position for receiving the next
4 trimmed thermoplastic slab.

✓ 1 4. A thermoplastic molding process in accordance
2 with claim 3 including the step of rotating ^{a plurality of}
3 thermoplastic molds on a table to position one mold at
4 a time in a position to receive the next trimmed
5 thermoplastic slab.

✓ 1 5. A thermoplastic molding process in accordance
2 with claim 4 in which the step of selecting an
3 extrusion die includes selecting a die having a
4 plurality of gate plates therein placed adjacent to
5 each other and separately adjustable to thereby vary
6 the thickness across the thermoplastic material being
7 extruded thereby.

✓ 1 6. A thermoplastic molding process in accordance
2 with claim 5 in which the step of selecting a die
3 includes selecting a die in which each of said
4 plurality of ^{gates} gate plates is attached to a motor allowing
5 the each plate to be moved remotely to vary the
6 position of each plate separately.

✓ 1 7. A thermoplastic molding process in accordance
2 with claim 6 in which each said motor is an electric
3 stepper motor.

1 8. A thermoplastic molding system comprising:
2 a thermoplastic extrusion die for the extrusion
3 of a thermoplastic slab, said extrusion die having
4 adjustable die gate members for varying the thickness
5 of the extruded material in different parts of the
6 extruded slab;

7 a trimmer for cutting said extruded thermoplastic
8 slab from said thermoplastic extrusion die;

9 a plurality of thermoplastic molds, each mold
10 being mounted on a movable platform for moving one
11 mold at a time in a position to receive a
12 thermoplastic slab being trimmed from said
13 thermoplastic extrusion die, whereby a molded part can
14 be formed with a variable thickness from a heated slab
15 of thermoplastic material being fed still heated from
16 an extrusion die.

1 9. A thermoplastic molding system in accordance
2 with claim 8 in which said plurality of molds moves on
3 said movable platform between a mold loading position
4 and a mold release position.

1 10. A thermoplastic molding system in accordance
2 with claim 9 in which said mold moveable platform is
3 a rotating platform rotating each said thermoplastic
4 mold mounted thereon to position one mold at a time in
5 a position to receive the next trimmed thermoplastic
6 slab from said extruding die.

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1 11. A thermoplastic molding system in accordance
2 with claim 10 in which said extrusion die plurality
3 of die gate members includes a plurality of extrusion
4 die plates therein positioned adjacent to each other
5 and separately adjustable to thereby vary the
6 thickness across thermoplastic material being extruded
7 from said die.

1 12. A thermoplastic molding system in accordance
2 with claim 11 in which said thermoplastic extrusion
3 die has a plurality of gate plates each having a motor
4 coupled thereto for moving each gate plate separately
5 by remote control.

1 13. A thermoplastic molding system in accordance
2 with claim 12 in which each said motor is an electric
3 stepper motor.